

Claims:

- 1 1. A dual packet configuration for wireless communication, comprising:
2 a first portion that is modulated according to a serial modulation; and
3 a second portion that is modulated according to a parallel modulation.
- 1 2. The dual packet configuration of claim 1, further comprising:
2 the serial modulation comprising direct sequence spread spectrum (DSSS); and
3 the parallel modulation comprising orthogonal frequency division multiplexing
4 (OFDM).
- 1 3. The dual packet configuration of claim 2, wherein the first portion
2 includes a preamble and a header.
- 1 4. The dual packet configuration of claim 3, wherein the preamble comprises
2 a long preamble.
- 1 5. The dual packet configuration of claim 3, wherein the preamble comprises
2 a short preamble.
- 1 6. The dual packet configuration of claim 3, the header including an OFDM
2 mode bit.
- 1 7. The dual packet configuration of claim 6, the header further including a
2 length field indicating the duration the second portion.
- 1 8. The dual packet configuration of claim 2, the second portion further
2 comprising:

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3 an OFDM synchronization pattern;
4 an OFDM signal symbol; and
5 an OFDM payload.

1 9. The dual packet configuration of claim 8, further comprising:
2 the OFDM signal symbol including a data rate section and a data count section.

1 10. The dual packet configuration of claim 2, further comprising:
2 the first portion based on a first clock fundamental; and
3 the second portion based on a second clock fundamental.

1 11. The dual packet configuration of claim 10, wherein the first clock
2 fundamental is approximately 22 Megahertz (MHz) and the second clock fundamental is
3 approximately 20 MHz.

1 12. The dual packet configuration of claim 2, wherein the first and second
2 portions are based on a single clock fundamental.

1 13. The dual packet configuration of claim 12, further comprising:
2 the second portion including OFDM symbols wherein each OFDM symbol
3 includes a guard interval with a standard number of samples for OFDM.

1 14. The dual packet configuration of claim 12, further comprising:
2 the second portion including OFDM symbols wherein each OFDM symbol
3 includes a guard interval with an increased number of samples.

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1 15. The dual packet configuration of claim 12, further comprising:
2 the second portion including OFDM symbols wherein each OFDM symbol
3 includes a reduced number of frequency subcarriers.

1 16. The dual packet configuration of claim 15, wherein each OFDM symbol
2 includes 48 frequency subcarriers.

1 17. The dual packet configuration of claim 15, wherein each of the frequency
2 subcarriers is a data subcarrier.

1 18. The dual packet configuration of claim 15, wherein the frequency
2 subcarriers include at least one pilot tone.

1 19. The dual packet configuration of claim 15, further comprising:
2 each of the frequency subcarriers initially comprising a data subcarrier;
3 wherein a subset of the data subcarriers is discarded and replaced with a
4 corresponding number of pilot tones for transmission; and
5 wherein upon reception the discarded data subcarriers are recreated using received
6 data.

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1 25. The wireless communication device of claim 24, wherein the first clock
2 fundamental is approximately 22 Megahertz (MHz) and the second clock fundamental is
3 approximately 20 MHz.

1 26. The wireless communication device of claim 21, further comprising:
2 a clock source based on a clock fundamental, the first and second portions based
3 on the clock fundamental.

1 27. The wireless communication device of claim 26, wherein the second
2 portion includes OFDM symbols, each OFDM symbol including a guard interval with a
3 standard number of samples for OFDM.

1 28. The wireless communication device of claim 26, wherein the second
2 portion includes OFDM symbols, each OFDM symbol including a guard interval with an
3 increased number of samples.

1 29. The wireless communication device of claim 26, wherein the second
2 portion includes OFDM symbols, each OFDM symbol including a reduced number of
3 frequency subcarriers.

1 30. The wireless communication device of claim 29, wherein each of the
2 frequency subcarriers is a data subcarrier.

1 31. The wireless communication device of claim 29, wherein the frequency
2 subcarriers include at least one pilot tone.

32. The wireless communication device of claim 29, further comprising:
the transmitter discarding at least one of the data subcarriers and replacing the
discarded data subcarriers with a corresponding number of pilot tones; and
the receiver regenerating the discarded data subcarriers based on received data
subcarriers.

1 33. The wireless communication device of claim 20, further comprising:
2 the transmitter and receiver each capable of communicating in a super short mode
3 in which only the second portion modulated according to the parallel modulation is
4 utilized.

1 34. The wireless communication device of claim 20, further comprising:
2 the transmitter and receiver each capable of communicating in a standard mode in
3 which the second portion is modulated according to the serial modulation.

1 35. The wireless communication device of claim 20, further comprising:
2 the transmitter and receiver each configured to operate in the 2.4 gigahertz
3 frequency band.

1 36. A method of wireless communication using a dual packet configuration,
2 comprising:

3 modulating a first portion of each packet according to a serial modulation; and
4 modulating a second portion of each packet according to a parallel modulation.

1 37. The method of claim 36, further comprising:
2 the modulating a first portion of each packet comprising modulating according to
3 direct sequence spread spectrum (DSSS); and
4 the modulating a second portion of each packet comprising modulating according
5 to orthogonal frequency division multiplexing (OFDM).

1 38. The method of claim 37, further comprising:
2 including a header with an OFDM mode bit in the first portion; and
3 including a length field in the header indicating a duration of the second portion.

1 39. The method of claim 37, further comprising:
2 the modulating a first portion of each packet comprising modulating based on a
3 first clock fundamental; and
4 the modulating a second portion of each packet comprising modulating based on a
5 second clock fundamental.

1 40. The method of claim 37, wherein the modulating first and second portions
2 of each packet comprises modulating based on a single clock fundamental.

1 41. The method of claim 40, wherein the modulating the second portion of
2 each packet comprises including a guard interval with a standard number of samples for
3 each OFDM symbol.

1 42. The method of claim 40, wherein the modulating the second portion of
2 each packet comprises including a guard interval with an increased number of samples
3 for each OFDM symbol.

1 43. The method of claim 40, wherein the modulating the second portion of
2 each packet comprises including a reduced number of frequency subcarriers for each
3 OFDM symbol.

1 44. The method of claim 43, further comprising:
2 discarding a subset of the data subcarriers;
3 replacing the discarded data subcarriers with a corresponding number of pilot
4 tones for transmission; and
5 regenerating the discarded data subcarriers based on received data.

1 45. The method of claim 36, further comprising:
2 switching to a super short mode of operation in which only the second portion
3 modulated according to the parallel modulation is utilized for communications.

1 46. The method of claim 36, further comprising:
2 switching to a standard mode of operation in which the second portion is
3 modulated according to the serial modulation.